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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/560,673	04/27/2000	Adam Goldstein	81862.P165	4397

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EXAMINER

PHILPOTT, JUSTIN M

ART UNIT PAPER NUMBER

2665

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/560,673	Applicant(s) GOLDSTEIN ET AL.	
	Examiner Justin M. Philpott	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-24,29-36 and 38-80 is/are pending in the application.
- 4a) Of the above claim(s) 38-80 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 4-24 is/are allowed.
- 6) ☒ Claim(s) 29-31 and 36 is/are rejected.
- 7) ☒ Claim(s) 32-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments (pages 29-34) filed January 19, 2005, with respect to the amended claims 1, 2 and 4-24 are persuasive in view of the amendment. Accordingly, claims 1, 2 and 4-24 are allowed for reasons discussed in the following action.

2. Applicant's arguments (page 28, third paragraph) filed January 19, 2005, with respect to claim 32 are persuasive. Accordingly, the rejection of claim 32 is withdrawn, and claim 32 is presently objected to in the following office action for minor informalities and for being dependent upon rejected claim 29.

3. Applicant's arguments (pages 25-26) filed January 19, 2005, with respect to claims 38-80 and the corresponding restriction requirement are not persuasive.

First, applicant argues that the restriction requirement is improper since the newly submitted claims 38-80 include all of the subject matter of a base claim previously examined. However, this argument is not persuasive since such a base claim, e.g., claim 29, recites broad language of a network switch and the new claims 38-80 recite limitations for an invention which has not been previously claimed by applicant as discussed further in the more specific arguments that follow.

More particularly, applicant argues (page 26, second paragraph) that new claim 38 "includes most of the elements of claim 12, the base claim [i.e., claim 1], and any intervening

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claims [i.e., claim 11]”. However, claim 38 recites a distinct invention. For example, claim 1 (the base claim of claim 12) recites a network switch having two or more crossbar switch fabrics, each of which include a plurality of ports and at least two channels each of which are coupled to one of two or more shared-memory switch fabrics. Claim 38, however, recites a distinct invention which may only comprise a single network port (e.g., see line 8), and is absent of any particular channels and specifically, absent of particular two or more channels, all of which make up the invention of claim 1. On the contrary, claim 38 recites a more general network switch, but which comprises the invention of port control operation in conjunction with a coupled notify ring (lines 1-15).

Additionally, applicant argues (page 26, third paragraph) that new claim 47 includes the elements of previously examined claim 32, the base claim (i.e., claim 29) and any intervening claims (claim 32 depends only upon claim 29) and should therefore be examined. However, this assertion by applicant is incorrect. Specifically, claim 47 recites an invention wherein packets are received “by an ingress crossbar switch fabric” (line 3); however, the combination of claims 29 and 32 describes a different invention which distributes packets received “from a network connection by one of a plurality of ports” of such a fabric (lines 3-4 of claim 29). Thus, applicant’s argument is not persuasive.

Further, applicant argues (page 26, fourth paragraph) that new claim 54 includes the elements of previously examined claim 36, the base claim (i.e., claim 29) and any intervening claims (i.e., claim 30). However, this assertion by applicant is incorrect for the same reasons discussed above regarding claim 47.

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Finally, with respect to applicant's argument in general that claims 38-80 should be examined by Examiner, despite reciting an invention different from the claims previously presented by applicant and still pending in this application (i.e., claims 1, 2, 4-24 and 29-36), applicant is reminded that claims 38-80 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: newly submitted independent claim 38 recites a port controller and notify ring not included in previously presented independent claims 1, 25, 29 and 37; newly submitted independent claim 47 recites a step of sending not included in the previously presented independent claims 1, 25, 29 and 37; newly submitted independent claim 54 recites steps of requesting, re-collecting and re-ordering not included in the previously presented independent claims 1, 25, 29 and 37; and newly submitted independent claims 60, 70 and 76 each recite a network switch architecture comprising a configuration not disclosed in the previously presented independent claims 1, 25, 29 and 37. Examining and searching with respect to these newly added claims 38-80 would impose an undue burden on the Examiner since applicant has already received an action on the merits for the originally presented invention. As discussed in the previous office action, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 38-80 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

4. Applicant's arguments with respect to claims 29-31, have been fully considered but they are not persuasive.

Applicant argues (page 27, third paragraph) with respect to claim 29 that the I/O ASICs of DeLong cannot be switch fabrics because DeLong discloses another element, 22, is a switch fabric. However, applicant's argument is not persuasive. First, DeLong does *not* disclose that I/O ASICs are *not* switch fabrics. Second, DeLong clearly states that switch fabric 22 is, in a preferred embodiment, a crosspoint ASIC (col. 4, line 2), contemplating that an ASIC may in fact be a switch fabric. Third, the definition of a switch fabric is well established in the art as the combination of: "a routing device providing a set of numbered node interfaces" (see "The Authoritative Dictionary of IEEE Standards Terms, 7th Edition", IEEE 2000, definition of 'switch') and a "device or a collection of devices which provides a general routing capability" (IEEE 2000, definition of 'fabric'). Accordingly, DeLong's I/O ASICs which "include[] a plurality of ports that are connected with other devices in the network. ... for receiving and transmitting data units" (col. 4, lines 3-5) indicates an operation as a switch fabric as broadly recited in applicant's claim 29. Thus, applicant's argument is not persuasive.

Additionally, applicant argues (page 27, fourth paragraph) with respect to claim 29 that DeLong teaches "loading the received data unit into memory before distributing the data unit to the crossbar switch fabric 22", and thus cannot teach the language of claim 29 which recites, "distributing packets ... from a network connection ... of a crossbar switch to at least two shared-memory switch fabrics" (emphasis added). However, DeLong clearly teaches that packets are distributed from a network connection (e.g., connection coupling ASICs 16 and 18 to crosspoint 22, see FIG. 1) to at least two shared-memory switch fabrics (e.g., connection coupling crosspoint 22 to ASICs 12 and 14) (e.g., see col. 4, lines 18-40, wherein when the data unit received at ASIC 12 does not correspond to a port at ASIC 12, the data unit is flooded, or

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sent to each of the other ports including those at ASICs 16 and 18 by inherently passing through crosspoint 22 as shown in FIG. 1). Thus, applicant's argument is not persuasive.

Further, applicant argues (page 28, first and second paragraphs) that claims 30 and 31 should be allowed for the same reasons discussed regarding claim 29. However, as discussed above, applicant's argument is not persuasive.

Election/Restrictions

5. As discussed in the previous office action, newly submitted claims 38-80 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: newly submitted independent claim 38 recites a port controller and notifying ring not included in previously presented independent claims 1, 25, 29 and 37; newly submitted independent claim 47 recites a step of sending not included in the previously presented independent claims 1, 25, 29 and 37; newly submitted independent claim 54 recites steps of requesting, re-collecting and re-ordering not included in the previously presented independent claims 1, 25, 29 and 37; and newly submitted independent claims 60, 70 and 76 each recite a network switch architecture comprising a configuration not disclosed in the previously presented independent claims 1, 25, 29 and 37.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 38-80 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

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6. This application contains claims 38-80 drawn to an invention nonelected with traverse in applicant's response filed January 19, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Objections

7. Claims 1 and 32 are objected to because of the following informalities: "fabric is unique" (claim 1, line 7) should be changed to "fabric are unique"; and "information which" (claim 32, line 5) should be changed to "information indicating which". Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,141,344 to DeLong.

Regarding claim 29, DeLong teaches a method using a network switch (e.g., switch 10 in FIG. 1) having a hybrid switch architecture, the method comprising: distributing packets received from a network connection by one of a plurality of ports (e.g., connections from 16/18

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to 22, coupled to ports 0-M and 0-N) of a crossbar switch fabric (e.g., switch fabric 22) to at least two shared-memory switch fabrics (e.g., I/O ASIC 12 and 14); and storing the packets distributed from the ingress crossbar switch fabric (e.g., 22) in a shared buffer memory (e.g., memory, see col. 5, lines 63-64 regarding step 70 of FIG. 4) associated with each shared-memory switch fabric (e.g., 12 and 14) (e.g., see col. 4, line 53 – col. 6, line 17).

Regarding claim 30, DeLong teaches removing header or control information from received packets before distribution (e.g., see col. 4, lines 17-40 regarding data unit header comprising a destination address, and upon the corresponding destination not being identified, flooding the data unit to all ports is performed which inherently comprises removing the specific destination address).

Regarding claim 31, DeLong teaches the crossbar switch (e.g., 22) and shared-memory switch fabrics (e.g., 12/14) are configured to distribute and store, respectively, packets in the shared buffer memory (e.g., see col. 5, lines 63-64 regarding loading a data unit into memory) without reference to the final destination (e.g., see col. 4, line 17 – col. 5, line 59).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeLong.

Regarding claim 36, DeLong teaches the method discussed above regarding claim 30 and further, teaches packets are requested by an egress port controller based on an availability of a channel regardless of the order received by an ingress port controller (e.g., see col. 6, line 18 – col. 7, line 25 regarding transmit and receive queues, wherein availability of the channel corresponding to the transmit and receive queues determines data unit transmission). Further, while DeLong may not specifically disclose packets are transmitted in the order of receipt or are re-ordered prior to transmission, claim 36 was rejected in the previous office action by the Examiner taking official notice that such a limitation is well known in the art. That is, it is well known in the art of packet transmission to transmit packets either in the order of receipt or in a re-ordered arrangement. In Applicant's response to the previous office action, Applicant has not traversed the Examiner's assertion of official notice or Applicant's traverse is not adequate. Therefore, in accordance with MPEP 2144.03(C), the limitations recited in these claims

comprise well-known art and are hereafter taken to be admitted prior art. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to transmit packets in DeLong either in the order of receipt or in a re-ordered arrangement since it is well known in the art of packet transmission to transmit packets either in the order of receipt or in a re-ordered arrangement.

Allowable Subject Matter

12. Claims 1, 2 and 4-24 are allowed.

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13. Claim 32-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is an examiner's statement of reasons for allowance:

newly amended independent claim 1 is allowed for reasons argued by applicant in the remarks (pages 29-30) filed January 19, 2004; and

claims 2 and 4-24 depend upon claim 1 and are therefore allowed for the same reasons discussed above regarding claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

15. The following is a statement of reasons for the indication of allowable subject matter:

claim 32 comprises allowable subject matter for reasons argued by applicant in the remarks (pages 28) filed January 19, 2005; and

claims 33-35 depend upon claim 32 and therefore comprise allowable subject matter for the same reasons discussed above regarding claim 32.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

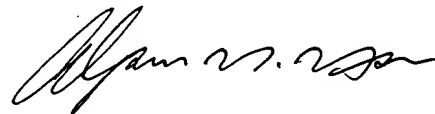
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on 571.272.3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin M Philpott



ALPUS H. HSU
PRIMARY EXAMINER